abcam

ab239399

Anti-Lamin B1 antibody [EPR22165-121] - BSA and Azide free

Recombinant | RabMAb | Advanced Validation | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR22165-121
Purification technique	Affinity purification Protein A
Concentration	1.004 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human, Mouse
Dilution info	-

Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Human, Rat
Dilution info	-
Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

mIHC

Tested

Species	Human
Dilution info	-
Notes	Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Expected

Species	Mouse
Dilution info	-
Notes	Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	-
Notes	Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

ICC/IF

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Human, Mouse
Dilution info	-
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0). Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Mouse
Dilution info	-
Notes	Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0). Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	-
Notes	Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0). Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Target data

See full target information LMNB1

Function	Lamins are intermediate filament proteins that assemble into a filamentous meshwork, and which constitute the major components of the nuclear lamina, a fibrous layer on the nucleoplasmic side of the inner nuclear membrane (PubMed:28716252, PubMed:32910914). Lamins provide a framework for the nuclear envelope, bridging the nuclear envelope and chromatin, thereby playing an important role in nuclear assembly, chromatin organization, nuclear membrane and telomere dynamics (PubMed:28716252, PubMed:32910914). The structural integrity of the lamina is strictly controlled by the cell cycle, as seen by the disintegration and formation of the nuclear envelope in prophase and telophase, respectively (PubMed:28716252, PubMed:32910914).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Storage information	Do Not Freeze

Notes

ab239399 is the carrier-free version of ab229025.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Lamin B1 also known as LMNB1 is a protein that plays an important role in the structure of the nuclear lamina a dense fibrillar network inside the nucleus of cells. This protein belongs to the lamin family and has an approximate molecular weight of 66 kDa. Lamin B1 is expressed in nearly all types of cells acting as a structural component by interacting with chromatin and anchoring the nuclear envelope. It contributes to regulating nuclear stability and mechanical support which is essential for proper cell function.
Biological function summary	Lamin B1 serves many important functions by providing structural integrity and regulating gene expression through chromatin organization. Part of the nuclear lamina complex Lamin B1 interacts with other lamin proteins such as Lamin A and Lamin C forming a mesh-like structure that supports the nuclear envelope. This protein also affects cellular processes such as DNA replication RNA transcription and cell division indicating its broad impact on various cellular activities.
Pathways	Lamin B1 plays an important role in gene expression regulation and cell cycle control. It interacts with pathways involved in chromatin remodeling influencing the access of transcription factors to DNA which affects gene expression profiles. Lamin B1 associates with related proteins such as Lamin A/C and other nuclear matrix proteins to maintain cellular architecture stability and normal cell function. This organization is vital to ensure the accuracy of cellular processes and prevent anomalies during cell division.
Associated diseases and disorders	Mutations or altered expression of Lamin B1 have been associated with several pathological conditions. One noteworthy disorder is autosomal dominant adult-onset leukodystrophy where Lamin B1 expression levels are abnormal. This protein also connects to multiple sclerosis through its role in maintaining nuclear architecture. Additionally changes in Lamin B1 expression levels can influence

pathways involving Lamin A/C and potentially lead to other laminopathies highlighting its influence in maintaining cellular health and contributing to disease development.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

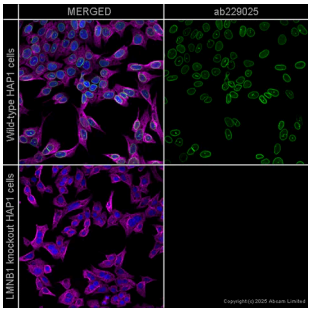
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

14 product images



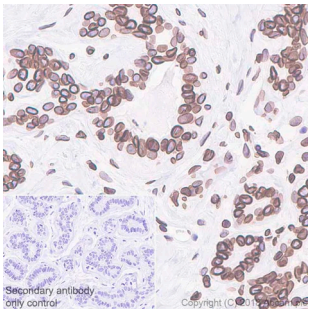
Immunocytochemistry/ Immunofluorescence - Anti-Lamin B1 antibody [EPR22165-121] - BSA and Azide free (ab239399)

Lamin B1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Lamin B1 antibody

This data was developed using ab229025 the same antibody clone in a different buffer formulation.
ab229025 staining LMNB1 in Hap1 WT and Hap1 LMNB1 KO cells. The cells were fixed with 4% paraformaldehyde (10 min), permeabilized with 0.1% PBS-Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1%PBS-Tween for 1h. The cells were then incubated overnight at 4°C with ab229025 at 0.2µg/ml (shown in green) and ab7291, Mouse monoclonal [DM1A] to alpha Tubulin - Loading Control (shown in pseudocolour magenta). Cells were then incubated with ab150081, Goat polyclonal Secondary Antibody to Rabbit IgG - H&L (Alexa Fluor® 488), pre-adsorbed at 1/1000 dilution. Nuclear DNA was labelled with DAPI (shown in blue).

Also suitable in cells fixed with 100% methanol (5 min).

Image was acquired with a high-content analyser (Operetta CLS, Perkin Elmer) and a single confocal section is shown.



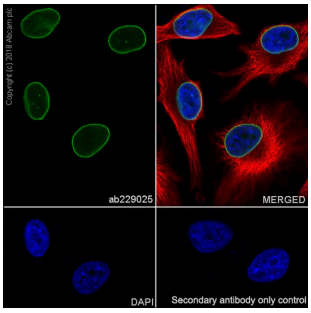
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Lamin B1 antibody [EPR22165-121] - BSA and Azide free (ab239399)

Lamin B1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Lamin B1 antibody

Immunohistochemical analysis of paraffin-embedded human breast tissue stained for Lamin B1 using ab229025 at 1/2000 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Nuclear envelope staining on human breast (PMID: 26469707) is observed. Counterstained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) ready to use.

Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (a229025).

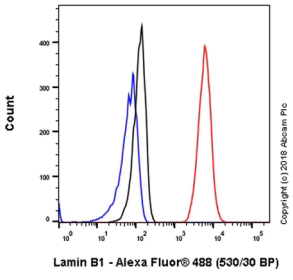


Immunocytochemistry/ Immunofluorescence - Anti-Lamin B1 antibody [EPR22165-121] - BSA and Azide free (ab239399)

Lamin B1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Lamin B1 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (human epithelial cell line from cervix adenocarcinoma) cells labeling Lamin B1 (Green) with ab229025 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution. Confocal image showing nuclear membranous staining in HeLa cells. Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) was used as a counterstain at 1/200 dilution. The nuclear counterstain was DAPI (Blue).
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Alexa Fluor®488 Goat anti-Rabbit secondary (ab150077) at 1/1000 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab229025).

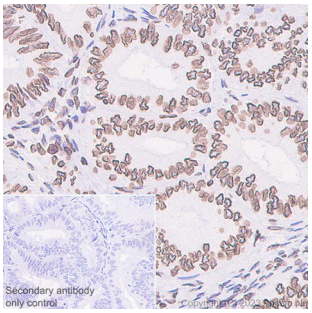


Flow Cytometry (Intracellular) - Anti-Lamin B1 antibody [EPR22165-121] - BSA and Azide free (ab239399)

Lamin B1 Flow Cytometry (Intracellular) staining using rabbit Anti-Lamin B1 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol permeabilized HeLa (human epithelial cell line from cervix adenocarcinoma) cell line labeling Lamin B1 with ab229025 at 1/500 dilution (Red) compared with a Rabbit monoclonal IgG isotype control (ab172730) (Black) and an unlabeled control (cells without incubation with primary antibody and

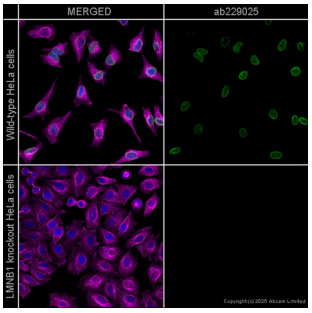
secondary antibody) (Blue). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/2000 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab229025).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Lamin B1 antibody [EPR22165-121] - BSA and Azide free (ab239399)

Lamin B1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Lamin B1 antibody

Immunohistochemical analysis of paraffin-embedded human endometrial carcinoma stained for Lamin B1 using ab229025 at 1/2000 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP polymer). Nuclear envelope staining on human endometrial carcinoma is observed. Counterstained with hematoxylin. Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). The section was incubated with ab229025 at 4°C overnight This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab229025).



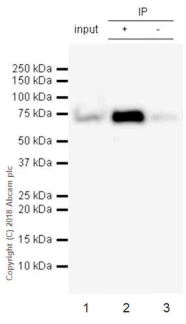
Immunocytochemistry/ Immunofluorescence - Anti-Lamin B1 antibody [EPR22165-121] - BSA and Azide free (ab239399)

Lamin B1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Lamin B1 antibody

This data was developed using ab229025 the same antibody clone in a different buffer formulation.
ab229025 staining LMNB1 in HeLa WT and HeLa LMNB1 KO cells. The cells were fixed with 4% paraformaldehyde (10 min), permeabilized with 0.1% PBS-Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1%PBS-Tween for 1h. The cells were then incubated overnight at 4°C with ab229025 at 0.2µg/ml (shown in green) and ab7291, Mouse monoclonal [DM1A] to alpha Tubulin - Loading Control (shown in pseudocolour magenta). Cells were then incubated with ab150081, Goat polyclonal Secondary Antibody to Rabbit IgG - H&L (Alexa Fluor® 488), pre-adsorbed at 1/1000 dilution. Nuclear DNA was labelled with DAPI (shown in blue).

Also suitable in cells fixed with 100% methanol (5 min).

Image was acquired with a high-content analyser (Operetta CLS, Perkin Elmer) and a single confocal section is shown.



Immunoprecipitation - Anti-Lamin B1 antibody [EPR22165-121] - BSA and Azide free (ab239399)

Lamin B1 was immunoprecipitated from 0.35 mg HeLa (human epithelial cell line from cervix adenocarcinoma) whole cell lysate with ab229025 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab229025 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/5000 dilution.
Lane 1: HeLa whole cell lysate 10 µg (input).
Lane 2: ab229025 IP in HeLa whole cell lysate (+).
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab229025 in HeLa whole cell lysate.

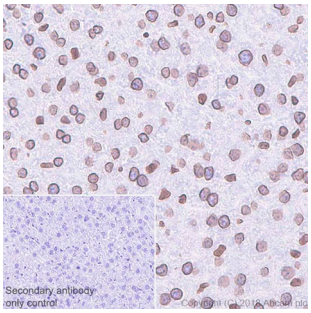
Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 5 seconds.

A very weak band around 66 kDa detected in lane 3 is due to spill over from lane2 (+).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab229025).
All lanes:
Immunoprecipitation - Anti-Lamin B1 antibody [EPR22165-121] - Nuclear Envelope Marker (ab229025)

Predicted band size: 66 kDa

Observed band size: 66 kDa



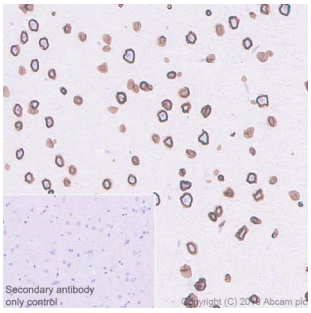
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Lamin B1 antibody [EPR22165-121] - BSA and Azide free (ab239399)

Lamin B1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Lamin B1 antibody

Immunohistochemical analysis of paraffin-embedded mouse liver tissue stained for Lamin B1 using ab229025 at 1/2000 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Nuclear envelope staining on mouse liver (PMID: 19925772) is observed. Counterstained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) ready to use.

Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab229025).



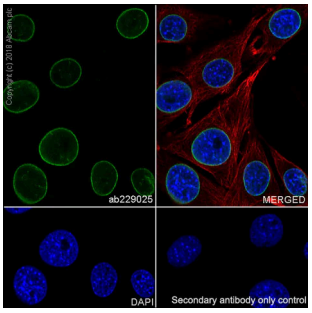
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Lamin B1 antibody [EPR22165-121] - BSA and Azide free (ab239399)

Lamin B1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Lamin B1 antibody

Immunohistochemical analysis of paraffin-embedded rat cerebrum tissue stained for Lamin B1 using ab229025 at 1/2000 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Nuclear envelope staining on rat cerebrum (PMID: 26469707, PMID: 19925772) is observed. Counterstained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) ready to use.

Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).

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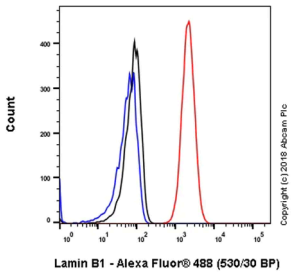


Immunocytochemistry/ Immunofluorescence - Anti-Lamin B1 antibody [EPR22165-121] - BSA and Azide free (ab239399)

Lamin B1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Lamin B1 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized NIH/3T3 (mouse embryonic fibroblast cell line) cells labeling Lamin B1 (Green) with ab229025 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution. Confocal image showing nuclear membranous staining in NIH/3T3 cells. Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) was used as a counterstain at 1/200 dilution. The nuclear counterstain was DAPI (Blue).
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Alexa Fluor®488 Goat anti-Rabbit secondary (ab150077) at 1/1000 dilution.

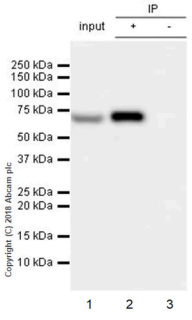
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab229025).



Flow Cytometry (Intracellular) - Anti-Lamin B1 antibody [EPR22165-121] - BSA and Azide free (ab239399)

Lamin B1 Flow Cytometry (Intracellular) staining using rabbit Anti-Lamin B1 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol permeabilized NIH/3T3 (mouse embryo fibroblast cell line) cell line labeling Lamin B1 with ab229025 at 1/500 dilution (Red) compared with a Rabbit monoclonal IgG isotype control (ab172730) (Black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (Blue). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/2000 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab229025).



Immunoprecipitation - Anti-Lamin B1 antibody [EPR22165-121] - BSA and Azide free (ab239399)

Lamin B1 was immunoprecipitated from 0.35 mg NIH/3T3 (mouse embryo fibroblast cell line) whole cell lysate with ab229025 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab229025 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/5000 dilution.
Lane 1: NIH/3T3 whole cell lysate 10 µg (input).
Lane 2: ab229025 IP in NIH/3T3 whole cell lysate (+).
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab229025 in NIH/3T3 whole cell lysate.

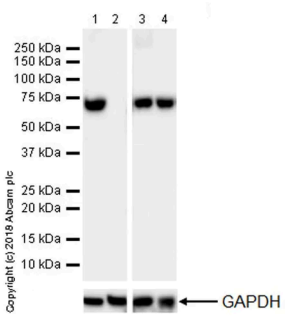
Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 5 seconds.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab229025).

All lanes:
Immunoprecipitation - Anti-Lamin B1 antibody [EPR22165-121] - Nuclear Envelope Marker (ab229025)

Predicted band size: 66 kDa

Observed band size: 66 kDa



Western blot - Anti-Lamin B1 antibody [EPR22165-121] - BSA and Azide free (ab239399)

Lamin B1 Western blot staining using rabbit Anti-Lamin B1 antibody

ab229025 was shown to specifically react with Lamin B1 in wild-type HAP1 cells as signal was lost in Lamin B1 knockout cells. Wild-type and Lamin B1 knockout samples were subjected to SDS-PAGE. ab229025 and ab181602 (Rabbit anti-GAPDH loading control) were incubated 1 hour at room temperature at 1/1000 dilution and 1/200,000 dilution respectively. Blots were developed with Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) secondary antibody at 1/100,000 dilution for 1 hour at room temperature before imaging. The blot was developed on a BIO-RAD® ChemiDoc™ MP instrument using the ECL technique.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab229025).

All lanes:
Western blot - Anti-Lamin B1 antibody [EPR22165-121] - Nuclear Envelope Marker (ab229025) at 1/5000 dilution

Lane 1:
Wild-type HAP1 whole cell lysate at 20 µg

Lane 2:
Lamin B1 knockout HAP1 whole cell lysate at 20 µg

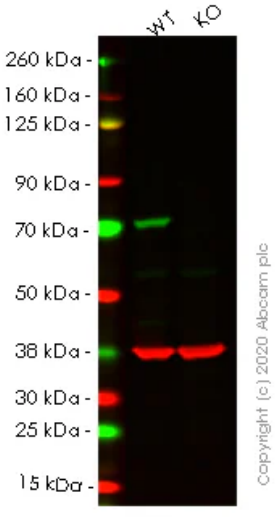
Lane 3:
HepG2 (human hepatocellular carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 4:
PC-12 (rat adrenal gland pheochromocytoma) whole cell lysate at 20 µg

Predicted band size: 66 kDa

Observed band size: 70 kDa

Exposure time: 8s



Western blot - Anti-Lamin B1 antibody [EPR22165-121] - BSA and Azide free (ab239399)

Lamin B1 Western blot staining using rabbit Anti-Lamin B1 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab229025).
Lanes 1- 2: Merged signal (red and green). Green - ab229025 observed at 66-70 kDa. Red - Anti-GAPDH antibody [6C5] - Loading Control (ab8245) observed at 37 kDa.

ab229025 was shown to react with lamin B1 in wild-type HeLa cells in western blot. Loss of signal was observed when knockout cell line ab255404 (knockout cell lysate ab263825) was used. Wild-type HeLa and LMNB1 knockout HeLa cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab229025 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L

(IRDye®800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.
All lanes:
Western blot - Anti-Lamin B1 antibody [EPR22165-121] - Nuclear Envelope Marker (ab229025) at 1/1000 dilution

Lane 1:
Wild-type HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human LMNB1 (Lamin B1) knockout HeLa cell lysate (ab263825) at 20 µg

Performed under reducing conditions.

Predicted band size: 66 kDa

Observed band size: 66-70 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.